L [illegible] AT(1)
ACC NR: AT7003101 SOURCE CODE: UR/0105/66/000/006/0075/0083

AUTHOR: Karpenko, B. K.; Kabkov, G. Ya.

ORG: none

TITLE: Design of the basic dimensions of electric step-motors with active rotor

SOURCE: Elektrichestvo, no. 6, 1966, 75-83

TOPIC TAGS: electric motor, electrical engineering

ABSTRACT: The article presents a method for designing step-motors [illegible] permanent magnets mounted on the rotor and with 2-phase windings [illegible] be rectangular and the relation between performance parameters is easily established on this basis. An analysis of the triangular case and of the sinusoidal case, which approximates actual conditions, is difficult; appropriate correction factors are introduced in lieu of rigorous derivation. The overall rotor dimensions, i.e. its diameter and length are determined on the basis of specified load conditions and torque requirements; the [illegible] pieces) is determined [illegible] magnetization curve of the magnet material. Finally, the stator is designed around the rotor. A two-pole model is considered for illus-

Card 1/2

UDC: 621.313.13-133.4

0925 0254

L 10296-67

ACC NR: AP7003101

tration, but the same principle with appropriate modification of variables applies to a multipole construction. One of the most important performance parameters is the pickup rate, which together with the rotor inertia influences the design decisively. A numerical sample problem is solved, for illustration, considering two of the possible modes of motor operation: a) against an inertial load, b) against dry friction.

The design procedure outlined here points to the advantage of an assembled rotor construction over the so called monolithic (single-piece) rotor construction. Also, this procedure is applicable to a single-stator motor as well as to a two-stator motor, so that the relative merits of both types of stator construction can be evaluated. Orig. art. has: 7 figures, 13 formulas and 1 table. [JPRS: 37,479]

SUB CODE: 09 / SUBM DATE: 20Nov64 /

KABKOV, Yakov Ivanovich; RATNER, V.I., red.; NAUMOV, K.M., tekhn. red.

[Further efforts of the party organizations to improve the standard of living of Soviet workers]Rabota partiinykh organizatsii po dal'neishemu povysheniiu blagosostoianiia trudiashchikhsia; lektsiia, prochitannaia v Vysshei partiinoi shkole pri TsK KPSS. Moskva, Izd-vo VPSh i AON pri TsK KPSS, 1962. 29 p. (MIRA 15:12)

(Cost and standard of living)

KABLANOVSKIY, L. B.

"Elements of the Theory and Calculation of the Instruments for Measuring Pressures and Forces," 1947 (book)

Min. Aviation Industry, Res. Inst. #1

KABLASHOV, A.V.

Mastering the rated capacity by the Tomusinskaia 1-2 Mine. Ugol' 39 no.11:18-21 N '64. (MIRA 18:2)

1. Nachal'nik shakhty "Tomusinskaya 1-2", Kuzbass.

KABLASHOV, A.V., gornyy inzh.; KOSACHENKO, A.A., gornyy inzh.

Experience in using the KTU support at the "Tom-Usa 1-2" mine.
Ugol' 40 no.5:59-61 My '65. (MIRA 18:6)

1. Shakhta "Tomusinskaya 1-2".

DIOSZEGHY, Daniel, dr., prof.; RAPP, Tamas; SZAVA, Nandor; BENEDEK, Laszlo; HORVATH, Mihaly; GREGUSS, Pal, dr. (Jr); UNGUREANU, Cornel (Temesvar, Roman Nep[illegible]ztarsasag); CSORBA, Tamas; SZABOLCS, Gabor; KABLITZ, Richard (Lauda-Baden, Nemet Szovetsegi Koztarsasag); GYULAY, Alajos; LUZSA, Istvan; KOSZTOLANYI, Lajos

Technical and economic questions relating to oil utilization. Ipari energia 3 no. 1/2:4-8 Ja-F '62.

1. Hotechnikai Kutato Intezet (for Csorba and Szabolcs). 2. VEGYTERV (for Gyulay). 3. EROTERV (for Luzsa). 4. Orszagos Koolaj-es Gazipari Troszt (for Kosztolanyi).

Kablo, N.P.

CZECH

Preparing condensation products containing a phenol formaldehyde resin and a polyamide or the like fibre-forming substance. [illegible] Chemicke Zavody N.-P., and Kablo N.-P. (B.P. 718,491, 2.5.52. Czech., 3.5.49).—A phenol is condensed with CH_2O to give predominantly a phenol alcohol and/or di-*p*-dihydroxydiphenylmethane or a derivative, a high-mol. wt. polyamide (intrinsic η < 0·4), or similar linear polymer containing –NH·CO– groups, dissolved therein, and the condensation of phenol and CH_2O completed by heating, e.g., after acidification with an org. acid (lactic acid), volatile substances being distilled off. The products, after dissolving in a suitable solvent, e.g., cresylic acid + solvent naphtha + tetrahydronaphthalene + EtOH, may be used as insulating varnishes. L. A. O'Neill.

3
2 MAY

KHAGA, P.I., inzh., red.; VOROB'YEV, S.A., kand.tekhn.nauk, red.; KABLOV, A.A., inzh., red.; KUZUBOV, V.I., inzh., red.; LEONOV, A.Ye., dotsent, red.; TUPITSYN, A.I., kand.tekhn.nauk, red.; KHMARA, S.M., kand.tekhn.nauk, red.; DONSKOY, Ya.Ye., red.; KARDASH, G.I., red.; LYALYUK, I.P., red.; LIMANOVA, M.I., tekhn.red.

[Mechanization and automation; collected articles on the introduction of mechanization and automation at machinery plants in Kharkov] Mekhanizatsiia i avtomatizatsiia; sbornik statei ob opyte vnedreniia mekhanizatsii i avtomatizatsii na Khar'kovskikh mashinostroitel'nykh zavodakh. Khar'kov, Khar'kovskoe knizhnoe izd-vo, 1960. 373 p. (MIRA 14:4)
(Kharkov--Machinery industry) (Automation)

KABLOV, G. A.: Master Vet Sci (diss) -- "Changes in the nervous elements of the skin and mucosa of the oral cavity in hoof-and-mouth disease of cattle". Khar'kov, 1958. 12 pp (Min Agric USSR, Khar'kov Vet Inst), 150 copies (KL, No 7, 1959, 128)

KABLOV, G. A.

EXCERPTA MEDICA Sec 5 Vol 12/4 Gen. Path. Apr 59

1060. CHANGES IN THE NERVOUS ELEMENTS OF THE SKIN AND ORAL MUCOUS MEMBRANE IN FOOT AND MOUTH DISEASE OF CATTLE (Russian text) - Kablov G. A. - ARKH. PATOL. 1958, 20/9 (43-48) Illus. 3

Twenty-eight animals aged 1-5 yr. were studied: 10 were in the stage of formation of primary aphthae, 15 were in the stage of generalization and 3 had recovered one month previously. Histological studies were made of the tongue, mucosa and skin of the lower lip, the nasal mucosa, the skin of the neck, the mamillae, thigh, and hoofs; the staining methods used were Bielschowsky-Gross, Spielmeyer and haematoxylin-eosin. In the region of the primary aphthae, the nervous elements showed granular and lumpy degeneration of the terminal structures, whereas in unaffected spots the nerve fibres showed only loosening and swelling. When the process reaches the stage of generalization, the alterations in affected and unaffected regions become similar. In the region of secondary aphthae, 'hyponervism' appears. When the animals have survived the infection, normal conditions return in both skin and mucosa.

Brandt - Berlin

I. Iz [redacted] kafedry patologicheskoy anatomii (zav. - prof. N. G. Pariyskaya) Khar*kovskogo veterinarnogo instututa.

(FOOT AND MOUTH DISEASES, [redacted] pathology
skin & oral mucous neural changes in cattle

BABKIN, V.F., veterinarnyy vrach; KABLOV, G.A., kand.veter. nauk

Melanocarcinoma of sexual glands in hybrid ducks. Nauch. trudy "Ask.-Nov." 13:123-124 '63. (MIRA 17:2)

PHASE I BOOK EXPLOITATION SOV/5100

Kablov, Ivan Aleksandrovich, Dmitriy Mikhaylovich Levykin, Grigoriy Semenovich Pilyavskiy, and Ivan Pavlovich Prosyankin

Korpusnyye konstruktsii iz alyuminiyevykh splavov (Aluminum-Alloy [Ship] Hull Structures) Leningrad, Sudpromgiz, 1960. 151 p. 2,800 copies printed.

Scientific Ed.: P. A. Alsuf'yev; Ed.: A. I. Kuskova; Tech. Ed.: R. K. Tsal.

PURPOSE: This book is intended for technical personnel in the shipbuilding industry and other branches of industry engaged in the construction of aluminum-alloy structures.

COVERAGE: Experience gained in the construction of aluminum-alloy hull structures is discussed. Attention is given to the following: equipment and accessories used in the construction process, methods of preparing and processing aluminum alloys, types of joints for structures made of steel and aluminum alloys, the assembly, welding, and riveting of the structures, methods of protecting the structures against corrosion, and quality control. No

Card 1/6

KARASEV, N.Ye., mostovoy master; KABLOV, V.P., mostovoy master

The competition continues. Put' i put.khoz. 6 no.5:7 '62.
(MIRA 15:4)

1. Astrakhanskaya distantsiya Privolozhskoy dorogi.
(Railroads--Employees)

POPOV, N.; KABLUCHKO, A.

A book on the Hungarian economy and foreign trade ("Hungary; its economy and foreign trade." V.N.Myshkov. Reviewed by N.Popov, A.Kabluchko. Vnesh.torg.26 no.6:29-30 Je '56. (MLRA 9:9)
(Hungary--Economic conditions) (Hungary--Commerce)

CHEREPANOVA, L.G.; KABLUCHKO, A.L.

Foreign trade of the U.S.S.R. in 1960. Vnesh. torg. 41 no.11: 34-41 '61. (MIRA 14:11)
(Russia--Commerce)

KABLUCHKO, G. A.

Horticulture - Russia

33317. Sadovodstvo-Osnovnoy Istochnik Kolkhoznykh Dokhodov. Vinodeliye I Vinogradarstvo Moldavii, 1949, No. 5, C. 33-35

SO: Letopis' Zhurnal'nykh Statey Vol. 45, Moskva, 1949

KABLUCHKO, G. A.

Sorta plodovykh kul'tur Moldavii [Varieties of fruit corps in Moldavia]. Kishinev, Gos. izd-vo Moldavii, 1953. 488 p

SO: Monthly List of Russian Accessions, Vol 6 No 8 November 1953

KABLUCHKO, G.A.

[Fruit varieties in Moldavia] Sorta plodovykh kul'tur Moldavii. Izd.2. Kishinev, Gos.izd-vo Moldavii, 1954. 491 p.
(MIRA 13:2)

(Moldavia--Fruit--Varieties)

Kabluchko

USSR / Cultivated Plants. Fruits, Berries L-6

Abs Jour : Ref Zhur - Biol., No 6, March 1957, No 22832

Author : Kabluchko

Inst : Not Given

Title : Further Development of Plum Cultivation in Moldavia.

Orig Pub : Gredineritul vieritul shi vineritul Voldovei, 1955, No 1, 13-15; Sadovodstvo, vinogradarstvo i vinodelie Moldavii, 1955, No 1, 11-13

Abstract : The chief plantations of plums, the main Moldavian fruit variety, are concentrated in the Nisporensk, Kornesht, Kalarash, Strashensk, Dubossarek and Grigoriopolsk districts. The leading plum varieties are Moldavian Vengerka and balck Goldan. There are also such valuable varieties as sochinskaya Vengerka, Anna Shpet, Azhanskaya Vengerka, konservniy Renkold (Altana) and others. The early variety groups comprise 8.1%; medium -- 15 and late ripening, 76.9%. In the chief plum regions -- Kondri and nothern Pridneprovie -- the highly valrable, late ripening varieties comprise over 85%. The greatest longevity among the grafted and original trees is manifested by the local varieties, gray and black Goldan. 35-40 year old

Card : 1/2

Name: KARLUCHKO, Grigoriy Alekseyevich

Dissertation: Fruit cultivation in the Moldavian Dnester Valley

Degree: Doc Agr Sci

Affiliation: Kishinev Agr Inst imeni Frunze

Defense Date, Place: 2 Jul 56, Council of Moscow Order of Lenin Agr Acad imeni Timiryazev

Certification Date: 16 Mar 57

Source: BMVO 13/57

YEFIMOV, S.P., otv. red.; KABLUCHKO, G.A., red.; PELYAKH, M.A., red.; UNGURYAN, P.N., red.; LUKASHEVICH, P.A., red.; TALITSKIY, V.I., red.

[Reports and communications delivered at the Plenum of the Section for Fruit Culture, Viticulture, and Subtropical Crops of the Moldavian Scientific Research Institute of Fruit Culture, Viticulture, and Wine Making] Doklady i soobshcheniia na plenume sektsii sadovodstva, vinogradarstva i subtropicheskikh kul'tur, 23-29 avgusta. Kishinev. No.2. [Viticulture] Vinogradarstvo. 1960. 255 p. (MIRA 17:2)

1. Kishinev. Moldavskiy nauchno-issledovatel'skiy institut sadovodstva, vinogradarstva i vinodeliya.

UNGURYAN, P.N.; KABLUCHKO, G.A., otv.red.; FITOVA, L., red.; PELYAKH, M.A., kand.sel'skokhoz.nauk, red.; MOGILYANSKIY, N.K., doktor tekhn.nauk, zaslushennyy deyatel' nauki i tekhniki, red.; TALITSKIY, V.I., red.; TEL'PIS, V., tekhn.red.

[Principles of wine making in Moldavia] Osnovy vinodeliia Moldavii. Kishinev, Gos.izd-vo "Kartia moldoveniaske," 1960. 293 p. (Kishinev. Moldavskii nauchno-issledovatel'skii institut sadovodstva, vinogradarstva i vinodeliia. Trudy, vol.5). (MIRA 14:8)
(Moldavia--Wine and wine making)

KABLUCHKO, Grigoriy Alekseyevich; FITOVA, L., red.; KURMAYEVA, T., tekhn.red.

[Possibilities for the development and distribution of fruit culture in Moldavia] Perspektivy razvitiia i razmeshchenie plodovodstva v Moldavii. Kishinev, Gos.izd-vo "Kartia moldoveniaske," 1961. 30 p. (MIRA 14:6)
(Moldavia—Fruit culture)

KABLUCHKO, Grigoriy Alekseyevich

[Fruit culture in the Dniester Valley of Moldavia]Plodovodstvo Pridnestrov'ia Moldavii. Kishinev, Gos.izd-vo Moldavii, 1955. 221 p. (MIRA 16:2)
(Moldavia--Fruit culture)

Петров, С. М.

PETROV, Sergey Mikhaylovich; KABIUCHKO, V.V., redaktor; NAUMOV, K.M. tekhnicheskiy redaktor.

[Worker's movement and the spread of Marxism in Russia (1883-1894)] Rabochee dvizhenie i rasprostranenie marksizma v Rossii (1883-1894gg.) Moskva, Vysshaia partiinaia shkola pri TsK KPSS, 1957. 67 p. (MLRA 10:6)
(Russia--Labor and laboring classes)

YANISHEVSKIY, Ye.M.; GRIGORYAN, S.V.; BARANOV, E.N.; VERTEPOV, G.I.; KABLUKOV, A.D.; FEDOTOVA, A.I., red.izd-va; BYKOVA, V.V., tekhn. red.

[Endogenic dispersion holes of some hydrothermal deposits] Endogennye oreoly rasseianiia nekotorykh gidrotermal'nykh mestorozhdenii. [By]E.M.IAnishevskii i dr. Moskva, Gosgeoltekhizdat, 1963. 121 p. (MIRA 16:3)
(Geochemical prospecting) (Ore deposits)

GRIGORYAN, S.V.; KABLUKOV, A.D.

Use of correlation analysis for the interpretation of the data of geochemical testing. Geol.rud.mestorozh. 7 no.4:76-87 Jl-Ag '65.
(MIRA 18:8)

KABLUKOV, A.D., VERTEPOV, G.I.

Halos of dispersion of elements around uranium ore bodies. Geol. rud. mestorozh. no.2:20-31 Mr-Ap '60. (MIRA 13:8)
(Trace elements) (Uranium ores)

SOCHEVANOV, N.N.; KABLUKOV, A.D.; BARANOV, E.N.; BOGOLYUBOV, A.N.; VERTEPOV, G.I.; GRIGORYAN, S.V.; MAYOROVA, Ye.A.; RAZUMOVSKIY, N K.; TULIN, V.N.; YANISHEVSKIY, Ye.M.; SOLOVOV, A.P., red.

[Using dispersion halos and accompanying elements in prospecting for hydrothermal uranium deposits; methodological handbook] Ispol'zovanie oreolov rasseianiia urana i elementov-sputnikov pri poiskakh i razvedke gidrotermal'nykh uranovykh mestorozhdenii; metodicheskoe rukovodstvo. Moskva, Nedra, 1964. 194 p. (MIRA 17:9)

1. Russia (1923- U.S.S.R.) Geologicheskiy komitet.

AM5002725 BOOK EXPLOITATION UR/

Kablukov, A. D.; Sochevanov, N. N.; Baranov, E. N.; Bogolyubov, A. N.; Vertepov, G. I.; Grigoryan, S. V.; Mayorova, Ye. A.; Razumovskiy, N. K.; Tulin, V. N.; Yanishevskiy, Ye. M.; comps.

Use of diffusion aureoles of uranium and associated elements in prospecting and surveying for hydrothermal uranium deposits; methodologic handbook (Ispol'zovaniye oreolov rasseyaniya urana i elementov-sputnikov pri poiskakh i razvedke gidrotermal'nykh uranovykh mestorozhdeniy; metodicheskoye rukovodstvo) Moscow, Izd-vo "Nedra", 1964. 194 p. illus., biblio., append. 2350 copies printed. (At head of title: Gosudarstvennyy geologicheskiy komitet SSSR). Managing editor: for the publishing house: F. N. Chumakova; Technical editor: T. M. Shmakova; Proofreader: A. A. Sivakova

TOPIC TAGS: geochemical prospecting, hydrothermal uranium deposit, primary uranium diffusion aureole, radiometric anomaly, secondary uranium diffusion aureole, uranium ore deposit

PURPOSE AND COVERAGE: The purpose of this handbook is to describe the laws governing the distribution of uranium and associated elements in the indigenous rocks

Card 1/3 UDC: 553.495:552.142

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around hydrothermal uranium-ore bodies and in the river deposits above them; to demonstrate the possibility, the role, and the place of geochemical methods in solving such problems; and to describe the results of work on the development of primary and secondary diffusion aureoles of uranium and its associated elements. In addition to their own work, the authors used data from A. G. Vetrov, N. A. Voroshilov, V. S. Golubov, O. D. Gorbunov, M. Ya. Dar, V. M. Konstantinov, M. V. Kutenkov, L. T. Mishin, Ye. A. Sizov, and others. Most of the spectral and luminescent analyses were performed by L. F. Davydova, Yu. T. Donets, B. M. Yeloyev, E. V. Mozolevskaya, and R. V. Timofeyeva.

TABLE OF CONTENTS:

Card 2/3

AM5002725

SUB CODE: 08 /SUBM DATE: 09Jul64 /SOV REF:084 /OTH REF:011

Card 3/3

KABLUKOV, D. (gor. Borisoblebsk); VIKTOROV, S. (g. Sorochinsk); ZIMIN, P. (g. Volzhsk).

Correspondence with readers. Tekh. mol. 26 no.12:28 '58. (MIRA 11:12)

(Oxygen--Industrial applications) (Venus (Planet)) (Nuclear physics)

LAZARYAN, V.A., doktor tekhn. nauk; BARBAS, I.G., inzh.;
KABLUKOV, V.A., inzh.; MANASHKIN, L.A., inzh.

Use of electronic analog computers for solving problems on train starting. Vest. TSNII MPS 22 no.3:51-53 '63.
(MIRA 16:7)

1. Dnepropetrovskiy institut inzhenerov zheleznodorozhnogo transporta.
(Railroads--Trains--Mathematical models)

L 45696-66 EWT(d) IJP(c)

ACC NR: AR6017340 SOURCE CODE: UR/0044/66/000/001/B113/B114

AUTHOR: Belik, L. V.; Kablukov, V. A.; Manashkin, L. A.

REF SOURCE: Tr. Dnepropetr. in-ta inzh. zh.-d. transp., vyp. 50, 1964, 35-38 27 B

TITLE: Automatic selection of a step in the solution of problems by the Runge-Kutta method

SOURCE: Ref. zh. Matematika, Abs. 1B540

TOPIC TAGS: ordinary differential equation, numerical solution, Runge Kutta integration method

TRANSLATION: A method is studied for the automatic selection of a step in the numerical integration of differential equations by the Runge-Kutta method. Variant 1: Given a scale of permissible errors ε and a corresponding scale of steps h_k (k=1,2, ,...,n), the selection of a step is carried out according to the algorithm

$$0<\delta<\varepsilon,\ h_0,$$
$$\varepsilon<\delta<2\varepsilon,\ h_1,$$
$$\cdots\cdots\cdots$$
$$n\varepsilon<\delta<(n+1)\varepsilon,\ h_n,\quad \text{where}\quad \delta=|y_i|_{h,h}-|\bar{y}_i|_{x,h},$$

$\bar{y}_i$ are the values of y_i computed at this point by Newton's formula. However, here

Card 1/3 UDC: 518:517.91/.94

0

the choice of a step is limited by the scale, an increase in which produces a corresponding increase in the number of memory cells required. Variant 2: Given an interval of permissible error $[\varepsilon_{min}-\varepsilon_{max}]$ and a step h. The choice is made according to this algorithm:

$$\begin{aligned} \varepsilon_{min}<\delta<\varepsilon_{max}, &\quad h_k=h_{k+1},\\ \delta<\varepsilon_{max}, &\quad 2h_k=h_{k+1},\\ \varepsilon_{max}<\delta, &\quad \frac{1}{2}h_k=h_{k+1}. \end{aligned}$$

An inspection of the interval $[\bar{\varepsilon}_{min}, \bar{\varepsilon}_{max}]$, which contains $[\varepsilon_{min}, \varepsilon_{max}]$ leads to an algorithm which assures a more rapid choice of the step:

$$\begin{aligned} 0<\delta<\bar{\varepsilon}_{min}, &\quad h_{k+1}=4h_k,\\ \bar{\varepsilon}<\delta<\varepsilon_{min}, &\quad h_{k+1}=2h_k,\\ \varepsilon_{min}<\delta<\varepsilon_{max}, &\quad h_{k+1}=h_k,\\ \varepsilon_{max}<\delta<\bar{\varepsilon}_{max}, &\quad h_{k+1}=\frac{1}{2}h_k,\\ \bar{\varepsilon}_{max}<\delta, &\quad h_{k+1}=\frac{1}{4}h_k. \end{aligned}$$

KABLUKOVA, I. A.; ROMOVSKOVA, L. P.; ROSTOVSKOV, D. A.

Solution (Chemistry); Electrochemistry

Research in electrochemistry of non-aqueous solutions conducted by.; Zhur. ob. khim. 22, no. 1, 1952

SO: Monthly List of Russian Accessions, Library of Congress, May 1953, Uncl.

SOLOV'YEV, Yuriy Ivanovich; KABLUKOVA, Mariya Ivanovna; KOLESNIKOV, Yevgeniy Venediktovich; VOL'FKOVICH, S.I., akademik, otvetstvennyy redaktor; KANTOR, I.A., redaktor izdatel'stva; POLESITSKAYA, S.M., tekhnicheskiy redaktor

Ivan Alekseevich Kablukov. Moskva, Izd-vo Akad.nauk SSSR, 1957. 208 p. (MIRA 10:10)
(Kablukov, Ivan Alekseevich, 1857-1942)

S/135/60/000/007/009/014
A006/A002

AUTHORS: Peremilovskiy, I.A., Engineer, Kablukova, R.A., Engineer

TITLE: Electrodes for Hardfacing Drop Forging Dies

PERIODICAL: Svarochnoye proizvodstvo, 1960, No. 7, pp. 27-28

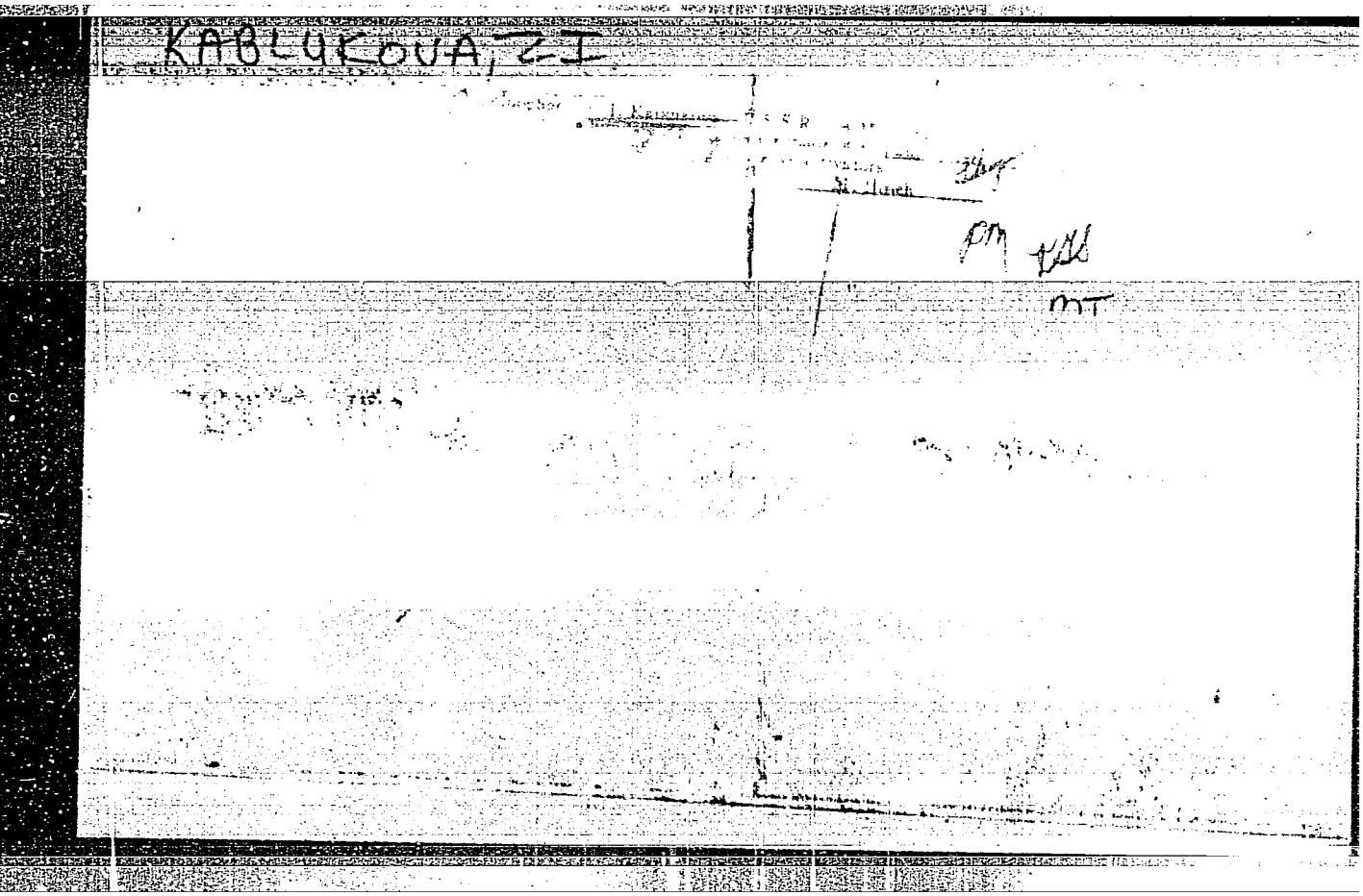
TEXT: Instead of manufacturing drop forging dies entirely of the expensive "3Kh2V8" (3Kh2V8) steel, it is economically more advantageous to use this steel for hard facing dies made of "5KhNS" (5KhNS) steel. Manual arc welding must be used for this purpose owing to the complicated configuration of dies and relatively short welds. For this reason the development of suitable welding electrodes was required, which would produce a metal surface with a composition corresponding to that of 3Kh2V8 steel. The "KS-3Kh2V8" (KS-3Kh2V8) ceramic flux, developed by the Kiyevskiy politekhnicheskiy institut (Kiyev Polytechnic Institute) can be used only in automatic welding with constant arc current and voltage. The problem was solved by using "Sv-08A" (Sv-08A) low-carbon steel rods of 4 mm diameter and a coating which ensured the proper alloying of the weld. The composition of the coating was calculated and corrected according to experimental results, thus the final composition was (in %): 24 "V-2" (V-2) ferrotungsten, 6.6 "KhR-6" (KhR-6)

Card 1/2

Electrodes for Hard Facing Drop Forging Dies

ferrochromium, 1.7 ferrovanadium, 0.4 graphite, 1.1 ferrosilicon, 14.9 ferrotitanium, 30.0 fluorspar, 20.4 marble. The coating was applied to the electrodes in four layers. Each layer was dried in air and in a drying chamber. The finished electrodes were roasted in a furnace at 350°C for 2 hours. Tests performed on three specimens showed that the weld metal had a composition corresponding to that of 3Kh2V8 steel, as shown in Table 3. Worn-out dies made of 5KhNS steel were hard-faced with the new electrodes, using 160-180 amps d-c of reverse polarity. The weld metal was applied in four layers. The electrodes were burning evenly without marked splashing or arc interruptions. The slag could be easily removed. Pores, cavities and other defects were not found. Prior to welding the dies were heated to 250-300°C. After machining, the dies were again heat-treated. After quench hardening the hardness was NRC 54-55 and after tempering NRC 52-54. The durability of hard-faced dies exceeded that of dies made only of 5KhNS steel by a factor of 3. There are 3 tables.

Card 2/2



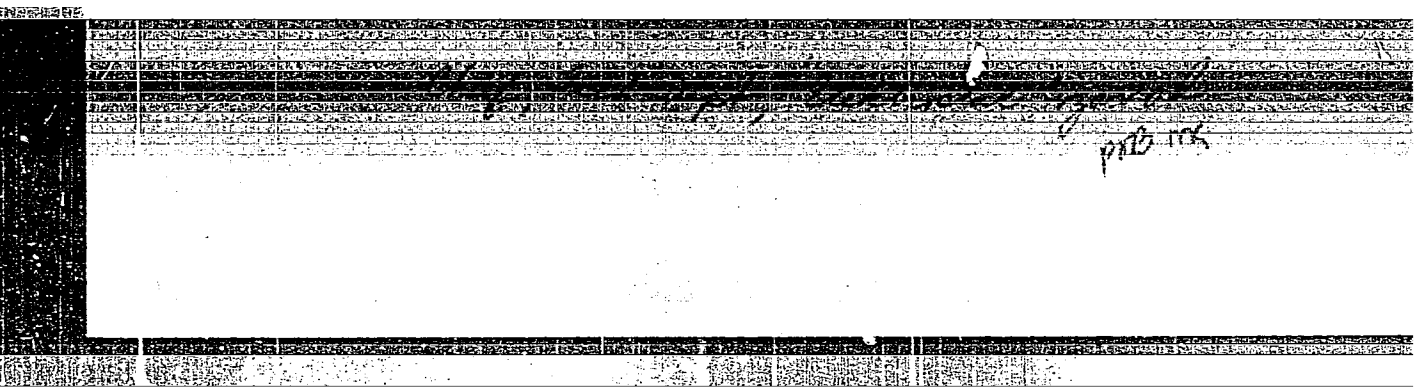
KABLUKOVSKIY, A.F.

YUDIN, S.T.; LEYKIN, V.Ye.; KABLUKOVSKIY, A.F.; MIKHAYLOV, O.A., redaktor; MIKHAYLOVA, V.V., tekhnicheskiy redaktor.

[Steel worker of an electric furnace] Stalevar elektropechi. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1953. 318 p. (MLRA 7:7)
(Electric furnaces) (Steel metallurgy)

KABLUKOVSKIY, Anat[illegible]y Fedorovich; LEBEDEV, A.I., redaktor; ZINGER, S.L., redaktor izdatel'stva; GOFSHTEYN, A.I., tekhnicheskiy redaktor

[Unused capacities of electric steel smelting shops] Rezervy elektrostaleplavil'nogo tsekha. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1956. 63 p. (MLRA 10:1)
(Steel--Metallurgy)



APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R000519810011-5"

KABLUKOVSKIY, A.F.

An experienced technologist is a good supervisor. Metallurg no.12:29-31 D '56. (MIRA 10:1)

1. Zavod "Elektrostal'."
(Glazkov, Soiridon Ivanovich) (Electrometallurgy)

SOV/130-58-9-5/23

AUTHORS: Kablukovskiy, A.F., Leyzerov, Ya.S. and Solodikhin, I.P.

TITLE: Improvement of the Melting Technology of Resistance Alloys in Electric Furnaces (Usovershenstvovaniye tekhnologii vyplavki splavov soprotivleniya v elektropechakh)

PERIODICAL: Metallurg, 1958, 3/1 Nr 9, pp 12 - 15 (USSR)

ABSTRACT: Alloys for resistance-furnace windings are difficult to produce, the high proportion of rejects leading to high costs. In order to improve the melting of these alloys, the work described was carried out at the "Elektrostal'" Works (with the participation of N.A. Shiryayev, V.Ye. Voynovskiy, M.Ya. Dzugutov, V.S. Nikol'skiy, Yu.V. Vinogradov and others). The alloys studied were 20-80 nichrome Kh20N80 and iron-chromium-aluminium alloy (chromal) OKh25Yu5 with the respective compositions according to GOST 5632-51 of (Table 1): 0.15, 0.06% C max; 0.50, 0.60% Si max; 1.50, 0.70% Mn max; 20.0-23.0, 23.0-27.0% Cr; 75.0-78.0, 0.60% max Ni; 0, 4.50-6.50% Al; 0.025, 0.030% S max; 0.030, 0.035% P max; remainder Fe. For nichrome, the old procedure was to melt electrolytic nickel with metallic chromium, deoxidising in two stages with silico-calcium in the first (for slag) and silico-calcium (60-65% Si, 25-30% Ca) or silico-zirconium (30-35% Si, 20-25% Zr) in the second, and

Card 1/4

Improvement of the Melting Technology of Resistance Alloys in Electric Furnaces

adding ferrotitanium 5-10 min before tapping. The new method is based on the melting of a charge with up to 60% of alloy scrap containing nickel, chromium and titanium, mark N1 nickel and mark 1 and Z metallic chromium being added in the required quantities; deoxidation by submerging silico-calcium or metallic calcium in the metal with the aid of rods as well as by diffusion through the slag. The charge, to which selected lime and fluorspar are added, is melted at full power and mechanically stirred. Samples are taken for malleability after which deoxidation is effected and further samples are taken (figure). Good plasticity is obtained with careful control of the calcium content. Metal temperature in the ladle is 1 520 - 1 540 °C and ingots are top or bottom poured. A hot-top composition (65% TiO_2 and 35% Al powder) is used together with white slag and the ingots are allowed to cool in the mould for at least two hours. The new method has enabled rolling in a 600-mill to be used instead of forging and accelerated and improved the melting process and the alloy quality

(Table 2). For the chromal alloy, the old procedure involved melting a fresh charge in 20-ton basic electric furnaces with an oxygen boil, alloying by adding low-carbon ferrochromium and primary lump aluminium during the refining period and adding aluminium-calcium and aluminium-barium alloys and cerium before tapping. The new method is based on: melting 1 500 kg carbon-containing scrap with 1620 kg type 45 steel scrap in a 5-ton furnace at full power with an ore boil and addition of chromium-aluminium alloy during refining; preliminary deoxidation of the bath with lump aluminium; the addition of metallic titanium (10 kg) or the corresponding amount of titanium containing scrap 5 min. before tapping; the use of carbon tetrachloride to protect the alloy from oxidation during bottom-pouring (tapping temperature 1 580 - 1 620 °C). Comparative data (Table 3) show the advantages of the new method.

There are 1 figure and 3 tables.

SOV/130-58-9-5/23

Improvement of the Melting Technology of Resistance Alloys in Electric Furnaces

ASSOCIATION: Zavod "Elektrostal'" im. I.F. Tevosyana ("Elektrostal'" Works imeni I.F. Tevosyan)

Card 4/4 1. Corrosion resistant alloys--Production 2. Industrial production--USSR 3. Electric furnaces--Applications

AUTHOR: Kablukovskiy, A. SOV/130-58-7-22/35

TITLE: A.P. Zhuravlev, Electric-furnace Melter (Stalevar elektropechi A.P. Zhuravlev)

PERIODICAL: Metallurg, 1958, Nr 7, pp 37 - 38 (USSR)

ABSTRACT: The author gives a brief account of the work of Aleksey Petrovich Zhuravlev, a steel melter at the "Elektrostal'" Works with over 30 years' experience. He mentions that, partly through the experience of Zhuravlev, the 1957 steel production was 13% greater than in the previous year, that in the first quarter of this year it amounted to 115%; and rejects have fallen from 0.99 to 0.73 and 0.12%, respectively. Other experienced melters at the works (e.g. Krasikov, Zakharov, Novikov) also have helped to train new personnel including Nikolay Vasil'chikov and Viktor Zhuravlev (son of A.P.Zhuravlev) and this sharing of experience has contributed to improved operation. There is 1 figure.

Card 1/1 1. Electric furnaces--USSR 2. Personnel--USSR

KABLUKOVSKIY, A.F.

15 (2), 15 (6)

SOV/131-59-7-6/14

AUTHORS: Zhikharevich, S. A., Rayzen, A. I., Gin'yar, Ye. A., Kosyreva, L. A., Kablukovskiy, A. F., Shorokhod, S. D.

TITLE: Refractory Concrete as Electric Insulating Material for Electrode Coolers of Electric-arc Furnaces (Ogneupornyy beton kak elektroizolyatsionnyy material dlya okhladiteley elektrodov dugovykh staleplavil'nykh pechey)

PERIODICAL: Ogneupory, 1959, Nr 7, pp 309-319 (USSR)

ABSTRACT: The magnesite-chromite tiles in the arch of a steel-melting furnace are saturated, during operation, by iron- and chromous oxide, and become more conductive in this way, which often leads to short circuits and a burning through of the coolers. Figure 1 shows the dependence of the logarithm of the specific electric resistance on the temperature for some industrial refractories. At the experimental plant of the Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (UNIIO) (Ukrainian Scientific Research Institute of Refractories (UNIIO)) and at the Semiluki Works, experiments with highly aluminous refractories, the original materials of which are indicated in a table, were carried out. The microscopic investigations were carried out by N. Ye. Drizheruk (Footnote 2).

Card 1/4

3

The mass composition and the properties of the samples are indicated in table 1. Figure 2 shows the thermal expansion, and figure 3 the dependence of the logarithm of the specific electric resistance of the samples. It was not possible, however, to ensure the electric insulation of the coolers in this way. Highly aluminous cement was also prepared at the experimental plant of the UNIIO. Highly aluminous fire clay with a grain size of from 3 to below 0.09 mm was used as a filler. The chemical composition and refractoriness of the cement and of the fire clay are indicated in table 2. The petrographic investigation was carried out by L. A. Kus'mina (Footnote 3), the X-ray examination by B. Ya. Sukharevskiy (Footnote 4) and the thermal analysis by V. V. Pustovalov (Footnote 5 and Fig 4). Further experiments were carried out with leaned masses, the composition, density and strength values of which are indicated in table 3. The characteristic of the samples is shown in table 4. Figure 5 shows the cohesion of the concrete with a refractory product and an iron tube, and figure 6 shows the cohesion of the concrete with a magnesite-chromite tile. But also this experiment did not ensure an adequate electric insulation of the coolers. Experiments with highly aluminous cement and highly aluminous tiles of a

Card 2/4

multi-component composition were also carried out at the experimental plant of the UNIIO. The properties of the cement and concrete with the filler of highly aluminous fire clay are indicated in table 5. Some data characterizing the quality of the highly aluminous arch tiles and of the fire clay are indicated in table 6. The insulation of the coolers by refractory concrete is carried out in 2 variants (Figs 7 and 8). The chemical composition of the concrete zone and of the slag crust is shown in table 7. The petrographic investigation was carried out by N. Ye. Drizheruk (Footnote 7). Figure 9 shows a concrete piece after 72 melts. The experiments carried out showed that the use of concrete eliminates the burning through of the coolers by short circuit, and extends the working period of the furnace arches by 12-15 %. Conclusions: The satisfactory application results of the concrete insulation for electrode coolers should be introduced, as soon as possible, in all electrometallurgic plants, particularly in the furnaces working with oxygen. The series production of the material needed for the insulation should be organized. There are 9 figures, 8 tables, and 20 references, 10 of which are Soviet.

Card 3/4

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (Ukraine Scientific Research Institute of Refractories) (Zhikharevich, S. A., Rayzen, A. I., Gin'yar, Ye. A., Kosyreva, L. A.); Zavod "Elektrostal'" ("Elektrostal'" Works) (Kablukhovskiy, A. F., Shorokhod, S. D.)

15 (2)

AUTHORS: Zegzhda, V. P., Kablukovskiy, A. F., Laktionov, V. S., Skorokhod, S. I. SOV/131-59-9-7/12

TITLE: The Use of Graphite Chamotte Bricks in Steel Casting Ladles and Gutters for Steel Melting Furnaces

PERIODICAL: Ogneupory, 1959, Nr 9, pp 419-423 (USSR)

ABSTRACT: The Vsesoyuznyy institut ogneuporov (All-Union Institute for Refractories) has carried out experiments with graphite-chamotte bricks, containing 15% and 25% of graphite, in 80 t ladles of the Izhora Works. In the "Elektrostal'" works experiments were made with 20 t casting ladles with graphite-chamotte bricks of the Borovichi Kombinat for refractories. The properties of the bricks are shown in table 1. The wear of the test bricks, burnt at high temperatures, is indicated in table 2. In casting steels of the types 10-45, EShKh15, 20G, 37KhN3A, 15KhFA, 20Kh, EU8, and U10A at the "Elektrostal'" works the graphite chamotte lining of the ladle has not exercised any influence on the carbon content of the metal. The composition of the mortar used may be seen from the table 3. Figures 1 and 2 (photos) show the condition of the joints, made from mortar Nr 1 and Nr 2 after

Card 1/3

10 melts. Data concerning the stability of the test ladles are given by table 4, and table 5 contains data concerning the wear of the lining of the ladle. The installation of a thermocouple for measuring the metal temperature in the ladle is represented in figure 3, and the respective measuring results are compiled in table 6. Figure 4 shows the manner in which the side walls of the casting gutters are subject to wear. Conclusions: When casting dead, bubble-free, steel with a carbon content of more than 0.5% the graphite-chamotte lining of the ladle does virtually not exercise any influence upon the carbon content of the metal. It must still be found out whether this lining can be used when casting steel with a lower carbon content. In order to prevent the destruction of the joints, the use of a special mortar is recommended. Owing to their higher heat-conductivity it is not advantageous to employ graphite-chamotte bricks for lining the bottom of the ladles. A further paper in this field will deal with the changes in the shape and the dimensions of these products, as well as the reduction of their heat conductivity. The necessity is stressed of of an industrial production of the graphite-chamotte bricks.

The Use of Graphite Chamotte Bricks in Steel Casting Ladles and Gutters for Steel Melting Furnaces SOV/131-59-9-7/12

There are 4 figures, 6 tables, and 7 references, 5 of which are Soviet.

(V. P. Zegzhda)

ASSOCIATION: Vsesoyuznyy institut ogneuporov (All-Union Institute for Refractories). Zavod "Elektrostal'" ("Elektrostal'" Works)

Card 3/3

PHASE I BOOK EXPLOITATION SOV/3594

Kablukovskiy, Anatoliy Fedorovich, and Yan Davydovich Rozentsveyg

Perspektivy razvitiya elektrometallurgii (Outlook for the Development of Electrometallurgy) Moscow, Metallurgizdat, 1960. 102 p. 2,500 copies printed.

Ed. of Publishing House: S.I. Venetskiy; Tech. Ed.: I.M. Evenson.

PURPOSE: This book is intended for workers in the metallurgical and machine industries and students in secondary technical schools and schools of higher technical education.

COVERAGE: The book deals with basic trends in the development of electric-furnace steel production in the Soviet Union. Advanced methods of intensifying the steelmaking process in electric-arc furnaces are discussed. Such methods include the use of oxygen, precipitation deoxidation, treatment with slag, increasing lining life, shortening idle time, and overall mechanization and automation of the production process. The principal characteristics of large arc furnaces (80-and 180-ton capacity) and such

Card 1/3

new methods of steelmaking as teeming in vacuum and the duplex method (converter-electric furnace) are discussed. No personalities are mentioned. There are 45 references, all Soviet.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress

PHASE I BOOK EXPLOITATION SOV/4203

Kablukovskiy, Anatoliy Fedorovich

Mastera elektroplavki; iz opyta zavoda "Elektrostal'" (Masters in Making Electric-Furnace Steel, From the Experience of the "Elektrostal'" Plant) Moscow, Metallurgizdat, 1960. 75 p. Errata slip inserted. 2,150 copies printed.

Ed.: L.F. Kosoy; Ed. of Publishing House: Ya.D. Rozentsveyg; Tech. Ed.: M.R. Kleynman.

PURPOSE: This booklet is intended for a wide circle of readers, including young steelworkers and foremen in electric-furnace steel plants, and can be used by students of metallurgical tekhnikums.

COVERAGE: The booklet presents the experience of what the author calls the "best" shops of the "Elektrostal'" Plant in increasing the life of electric-arc furnace lining, perfecting the methods of making and teeming some types of electric-furnace steels, organizing labor and production, and improving the technico-economic indexes of production. The advanced techniques employed to perform

Card 1/2

Masters in Making Electric-Furnace Steel (Cont.) SOV/4203

certain operations by outstanding masters of the production of electric-furnace steels as well as the possibility of further increase of output at existing shops are indicated. No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress (TN745.K28)

Card 2/2

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9-7-60

ADRIANOVA, V.P.; ANDREYEV, T.V.; ARANOVICH, M.S.; BARSKIY, B.S.; GROMOV, N.P.; GUREVICH, B.Ye.; DVORIN, S.S.; YERMOLAYEV, N.F.; ZVOLINSKIY, I.S.; KABLUKOVSKIY, A.F.; KAPELOVICH, A.P.; KASHCHENKO, D.S.; KLIMOVITSKIY, M.D.; KOLOSOV, M.I.; KOROLEV, A.A.; KOCHINEV, Ye.V.; LESKOV, A.V.; LIVSHITS, M.A.; MATYUSHINA, N.V.; MOROZOV, A.N.; POLUKAROV, D.I.; RAVDEL', P.G.; ROKOTYAN, Ye.S.; SMOLYARENKO, D.A.; SOKOLOV, A.N.; USHKIN, I.N.; SHAPIRO, B.S.; EPSHTEYN, Z.D.; AVRUTSKAYA, R.F., red. izd-va; KARASEV, A.I., tekhn.red.

[Brief handbook on metallurgy, 1960] Kratkii spravochnik metallurga, 1960. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1960. 369 p. (MIRA 13:7)
(Metallurgy)

KABLUKOVSKIY, A.F., MARTYNUSHKIN, A.M.

Economy of electric power in making electrical steel. Metallurg 5 no.7:13-17 Jl '60. (MIRA 13:7)
(Steel—Electrometallurgy)

S/130/60/000/009/003/004
A006/A002

AUTHORS: Kablukovskiy, A.F., Simonov, V.I., Zuyev, T.I., Vorob'yev, Yu.K.

TITLE: Intensified Melting in Arc Furnaces

PERIODICAL: Metallurg, 1960, No. 9, pp. 19 - 20

TEXT: When melting ШХ15 (ShKh15) ball bearing steel in electric arc furnaces at the "Elektrostal'" Plant, diffusion deoxidation during the reduction period and holding of the metal under carbide slag takes not less than one hour. Ferrochromium is added to the deoxidized metal 40 minutes after the onset of refining. The carbide slag is converted into white slag 10-15 minutes prior to teeming, and ferrosilicide lumps are supplied to the furnace. Prior to teeming the metal into the ladle, it is deoxidized with aluminum lumps (0.4 kg/ton). The total refining time is 1 hour 40 min - 2 hours 10 min. A new method was developed to raise the efficiency of 20-ton arc furnaces when melting ShKh15 steel without impairing the quality of the metal. This technology differs from the conventional method as follows: a) partial dephosphorization and melting of the charge are combined by adding lime and ore to the pool at the end of the melting period; b) sufficient degassing of the metal is ensured by a reduced carbon content at the be-

Card 1/2

ginning of the oxidizing period and by removing not less than 0.30% carbon during bubbling; c) the metal is preliminary deoxidized at the end of the oxidizing period with refined cast iron containing 4.0 - 4.5% C, 8.0-10.0% Mn and not over 0.030% P in an amount of 7.5-12.5 kg/t; d) additional deoxidizing of the metal prior to the formation of reducing slag with silico-chromium lumps (5.0-6.0 kg/ton) and aluminum (0.4 kg/ton); e) addition of the main portion of ferrochromium to the bare metal without preliminary diffusion deoxidation; f) deoxidation of the slag with coke powder and 75% ferrosilicide and final deoxidation of the metal with aluminum lumps (0.5 kg/ton) prior to teeming; g) the total reducing time is 60-70 min. The contamination of the metal in both cases was almost equal. The melting time with a fresh charge was reduced by 48 min; in remelting of waste it was reduced by 33 min i.e. by 15-19%. The average economy in electric power was 47 kwh/ton in remelting and 75 kwh/ton on a fresh charge. Presently the method is used for melting 12XH3A (12KhN3A), 18XHBA (18KhNVA), 40X (40Kh), ЭХ Вг (EKhVG), 60C2A (60S2A) and other structural and instrument steels at the Elektrostal' Plant. A table is given containing technical and economical data of experimental and conventional melts.

ASSOCIATION: "Elektrostal'" zavod (Elektrostal' Plant)

Card 2/2

TIMOSHENKO, V.V.; MARTYNISHKIN, A.M.; TSUKANOV, V.P.; GANGO, Ya.V.; SHIKOV, I.P.; NIKONOV, A.V.; POSTNIKOV, V.P.; KOROLEV, G.D.; ARTAMONOV, A.M.; TEMNIKOV, S.N.; KABLUKOVSKIY, A.F.; MAKHOV, A.Kh.; KOTIKOV, A.Kh.; ZNAMENSKIY, B.A.; ZUYEV, T.I.; POZDNYAKOV, A.P.; BALASHOV, S.A.; YEMMOKHIN, I.P.

New design of electrode holders for electric-arc smelting furnaces. Prom. energ. 15 no.8:13-14 Ag '60. (MIRA 15:1)
(Electric furnaces)

KABLUKOVSKIY, Anatoliy Fedorovich; LEYKIN, Veniamin Yefimovich; YUDIN, Sergey Timofeyevich; KRYLOV, V.I., red.; ISLENT'YEVA, P.G., tekhn. red.

[Steelmaking in electric furnaces] Stalevar elektropechi. Izd.2., ispr. i dop. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1961. 355 p. (MIRA 14:11)
(Steel—Electrometallurgy) (Furnaces, Electric)

S/130/61/000/003/003/008
A006/A001

AUTHORS: Kablukovskiy, A.F., Deputy Chief Engineer, Pankratov, A.A.

TITLE: Savings of Nickel in Electric Steelmelting Production

PERIODICAL: Metallurg, 1961, No. 3, pp. 17 - 22

TEXT: A series of measures were taken at the "Elektrostal'" Plant to achieve savings of nickel during the melting of steels and alloys in electric arc and induction furnaces. These measures include: 1) Remelting of alloy waste in electric arc furnaces using oxygen. The melting of 1Х18Н9Т (1Kh18N9T) steel by this method shows the following characteristic features. It is allowed to use 100% alloy waste in the charge, C not less than 0.15% above the upper limit of the steel grade to be remelted and 0.8 - 1.0 silicon; slag forming components - none. To accelerate melting of the heat, oxygen blowing should be started 55 - 65 minutes after switching on the current. After oxidizing the pool by blowing through water-cooled tuyeres, the required amount of ferrochromium is added. Oxygen blast can not be used to speed up the melting of ferrochromium. Liquefaction and reduction of Cr from slag oxides during the reduction period is achieved by deoxidation with 15 - 25 kg/t silicochrome (33% Cr and 50% Si) or 45% FeSi in 10 - 20 mm lumps.

Card 1/8

S/130/61/000/003/003/008
A006/A001

Savings of Nickel in Electric Steelmelting Production

The metal temperature in the ladle should be 1,550 - 1,600°C. The metal is syphon-cast into round non-greased molds to ingots of 500 kg and more. The Cr content in the finished metal should be within 17.0 - 18.0%, and Ni 9.0 - 9.5% (for sheets) and 10.2 - 11.0% (for pipes). The average time of melting 1Kh18N9T steel with oxygen on a 20-ton furnace is 2.7 - 3.0 hours. Remelting of nickel-containing waste permits the standardization of the charge as to the Ni and Cr content and ensures the chemical composition required at a minimum consumption of Ni. 2) Improving the technology of melting Cr-Ni-Mi-Cu 31 629 (EI629) steel containing not over 0.10% Cr; 1.0% Si; 1.0% Mn; 0.02% S; 0.03% P; 17.0-19.5% Cr; 27.0-30.0% Ni; 2.5-3.5% Mo; 2.5-4.5% Cu and not over 0.7% Ti. The characteristic peculiarities of this process of melting acid-resistant steel are: a) alloying of ferro-chromium, nickel, ferromolybdenum and copper with Armco-iron and wastes; b) deep deoxidation of the pool during the reduction of the heat, with silico-calcium and calcium metal; c) low temperature ranges of the metal in the ladle after teeming; d) teeming of steel to ingots only by syphon-casting. The melting of acid-resistant steel by this new technology reduced the amount of metal reject by almost a factor of 5, increased the output and reduced nickel and copper consumption per 1 ton of high-quality ingots. 3) Production of stainless-steel substitutes, low-alloyed with nickel, and with high manganese and nitrogen content. Approximate

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Card 2/8

chemical composition of such steels is: up to 0.1% C; up to 0.8% Si; 4.0-6.0% Mn; not over 0.03% S; not over 0.035% P; 17.0-20.0% Cr; 1.5-2.5% Ni; 0.15-0.20% N. Chrome manganese steel with nitrogen is melted in induction and arc furnaces with basic linings. The charge contains wastes of steel to be melted; mild iron with up to 0.05% C, nitrated ferrochromium, and nickel. Manganese is added within 5.5-5.8%; silicocalcium 5 - 6 kg/t. The temperature of liquid steel is 1,520 - 1,550°C. In the arc furnace, reduction is conducted under white slag which is deoxidized with crushed coke (2 - 3 kg/t) and silico-calcium powder (3 - 5 kg/t). In an induction furnace the slag is deoxidized with a mixture of aluminum powder and lime. Calcium metal and nickel magnesium alloy are added into the pool 20 and 10 minutes prior to teeming, respectively. The metal temperature in the furnace should then be 1,500 - 1,520°C. The metal is syphon-cast into round molds to ingots of 500 kg and more. The replacing of stainless 1Kh18N9T steel by manganese steel with nitrogen, having similar properties, yields savings of nickel as high as 70 kg per ton of finished metal. 4) The Institute of Electric Welding imeni Ye.O. Paton developed a new method of producing ingots by electric slag remelting of consumable electrodes in a water-cooled copper crystallizer. The electrode is melted by the heat liberated in the molten slag layer which plays the part of resistance when the electric current is passed through. The unit (Figure 1) for electric slag remelting consists of a water-cooled copper crystal-

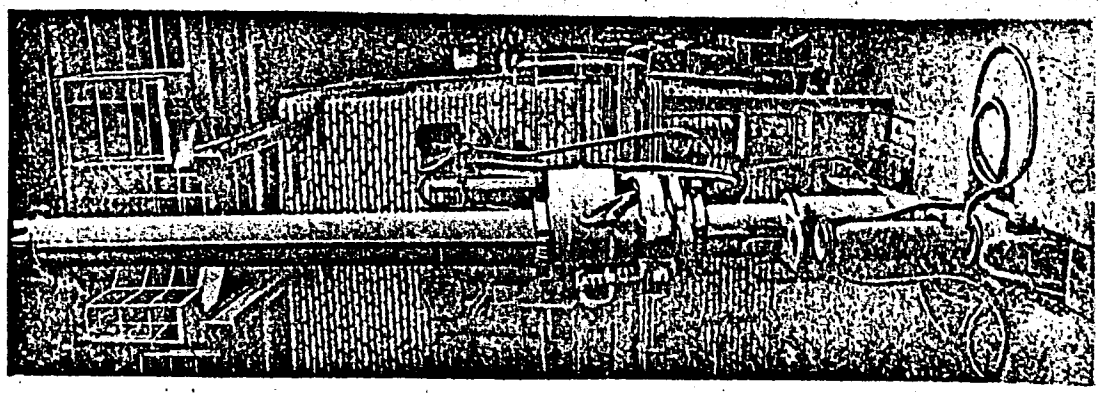
lizer, a copper bottom plate and an electrode column with a chuck-support. Round crystallizers of 180 - 420 mm section are used. The electrode diameter is 80 - 300 mm. Steel bars are welded to the electrodes which are clamped into the support. Fluxes of two types are employed: the АНФ-6 (ANF-6) operational flux containing about 60% CaF_2; 30-38% Al_2O_3; 3-6% CaO; up to 2% SiO_2 and not over 1% MgO and Fe_2O_3; the electroconducting solid flux for the initiation of the electroslag process, composed of a mixture of ПАМ-3 (PAM-3) alumomagnesium powder and the operational flux. The electric slag process warrants conditions assuring the production of ingots of compact cast structure, purifying the metal from harmful impurities and non-metallic inclusions; and reducing segregational phenomena. Saving of nickel is achieved by using rolled rod rejects as consumable electrodes. The remelting of these rods produces high-quality ingots and forgings without internal defects. 5) Protection of liquid metal against oxidation during teeming is brought about by using special vacuum-argon chambers (Figure 2) where large or small-size ingots can be top or syphon cast in a rarefied space or inert gas atmosphere. The chamber consists of a stationary floor and a removable cupola. In syphon casting a bottom plate, molds, extension pieces and a centering device are mounted on the floor. The cupola is placed upon the floor and the air is evacuated until a residual pressure of not over 1 mm Hg has been obtained. The ladle

with the metal is placed in the guides at the cupola top in such a manner that the axis of the ladle nozzle coincides with the center of the aperture for the metal jet. After evacuation the chamber is filled with argon. This method improves the surface of the ingots, reduces the depth of stripping, increases the output of metal and reduces nickel consumption. 6) Alloy scrap is reutilized by extracting and remelting in arc furnaces to standard ingots which are employed for the melting of nickel-containing steel. This process saved about 130 tons of nickel during 1960. 7) Collection and utilization of emery dust containing up to 8 - 12% nickel, is performed by equipping the emery mills with a suction ventilator. The dust is collected in special containers and transported to plants for processing. The enumerated measures yielded considerable savings in nickel.

Savings of Nickel in Electric Steelmelting Production

S/130/61/000/003/003/008
A006/A001

Figure 1: Installation for electroslag remelting



Card 6/8

Savings of Nickel in Electric Steelmelting Production

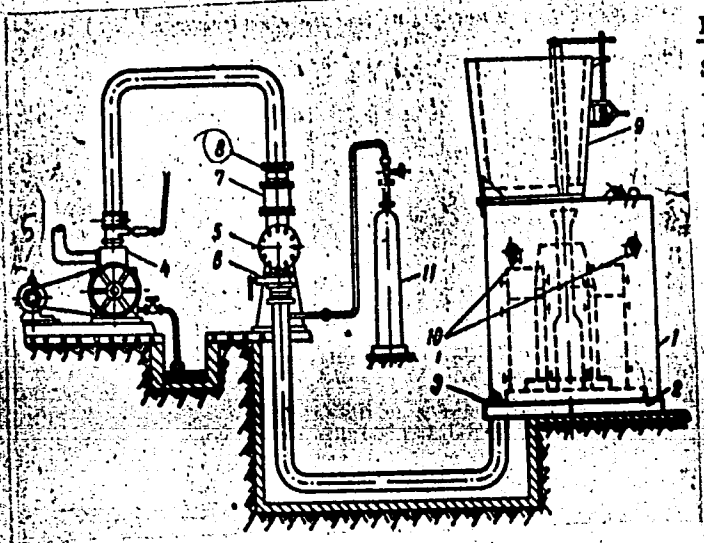


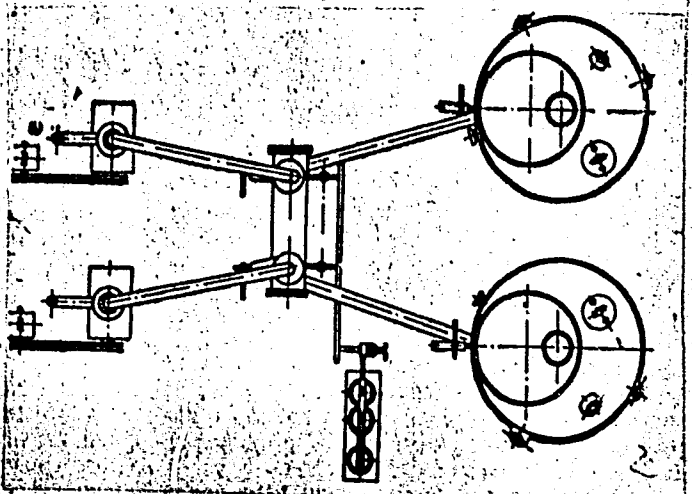
Figure 2

Schematic drawing of a unit for teeming steels and alloys in a vacuum and inert gas atmosphere; 1 - cupola; 2 - support bottom plate; 3 - rubber padding; 4 - vacuum pump; 5 - collecting filter; 6 - valve; 7 - filters; 8 - flexible bellows; 9 - steel teeming ladle; 10 - operational apertures; 11 - inert gas cylinder.

Card 7/8

Savings of Nickel in Electric Steelmelting Production

Figure 2 continued:



There are 2 figures and 3 tables.

ASSOCIATION: Zavod "Elektrostal'" (Electrostal' Plant)

Card 8/8

S/130/62/000/006/001/003
A006/A101

AUTHORS: Vinogradov, V. M., Yefroymovich, Yu. Ye., Kablukovskiy, A. F., Simonov, V. I.

TITLE: Automated control and regulation of heat conditions of a steel-melting arc furnace

PERIODICAL: Metallurg, no. 6, 1962, 16-18

TEXT: To eliminate deficiencies in the use of immersion thermocouples, the Central Laboratory of Automation and the Elektrostal' Plant have designed a mechanized unit for multiple periodic measurement of the metal temperature in the pool of a steelmelting arc furnace and have developed an automatic method of regulating the heat conditions of the furnace. The temperature-measuring unit consists of a pneumatic force-mechanism, a trolley for moving the thermocouple, guides, a mechanism controlling the position of the thermocouple and a control board. The unit is fixed to the furnace portal and the tungsten-rhenium thermocouple is introduced into the furnace through a special hole. Between the measurements, this aperture is closed by a pneumatic-driven slide which operates the electro-pneumatic relay circuit of the thermocouple. An electronic potentio-

Automated control and regulation ...

meter with a signal unit and automatic control of the completed measurement serves as a secondary registering device. The use of this device reduces errors in measuring the mean pool temperature; the temperature control can also be performed during smoke formation without switching-off the furnace. The metal temperature pulse can be used to produce a closed circuit for the automatic control of the furnace heat conditions. The metal temperature indicator is connected to the heat-condition control unit which operates the transformer-voltage step-switch and an automatic device regulating the power supply with the aid of a computer. Experiments made with the new and conventional units show that the temperature straggling of the metal in the pool and in the ladle can be reduced by a factor of 2.5 - 3.5. The efficiency of the furnace is raised by 7 - 9%; electric-power consumption decreases by 3.5 - 4.0%. There are 2 figures.

ASSOCIATIONS: TsLA (Central Laboratory of Automation); Zavod"Elektrostal'"
(Elektrostal' Plant)

S/133/62/000/006/002/015
A054/A127

AUTHORS: Kablukovskiy, A. F., Candidate of Technical Sciences, Simonov, V. I., Vinogradov, V. M., Engineers

TITLE: Temperature checks of the bath and control of arc furnace heat conditions

PERIODICAL: Stal', no. 6, 1962, 521 - 523

TEXT: The conventional method of ensuring the required heat conditions of smelting, based on immersion thermo-couples and manual control, sometimes causes variations in temperature of 60 - 70°C during the oxidizing and reducing periods. To improve the existing temperature control methods, tests were carried out at the "Elektrostal'" Plant in smelting ШХ15 (ShKh15) grade steel in a 20-ton arc furnace. In these tests the optimum operating conditions of the electrical system were established for obtaining the required metal temperatures and preventing overheating of the furnace lining. It was found that the main factors affecting the control of the furnace operation are the accuracy of the metal temperature recording in the bath and the accuracy with which instructions as to the

Temperature checks of...

duration of smelting phases, the amounts of slag forming, alloying elements, oxygen and ore are being followed. The conventional manual method of bath temperature recording with immersion thermocouples in arc furnaces not provided with electromagnetic stirring equipment is not accurate enough (the places of measurement vary) and necessitates switching off the current, thus causing unwarranted standstills (5 - 7 minutes for 20 measurements). Hence a mechanism has been developed to allow mechanical temperature recording of the metal by means of BP-5/20 (VR-5/20) immersion thermocouples. This mechanism gives more accurate average indications, because the places of recording in the depth of the bath and on the metal surface are stabilized. It was also possible to increase the number of measurements to 15 - 20 and to reduce the current switch-off time during smelting. When applying the new heat control method (manually), the variations in temperature were reduced to ±10°C and overheating of the lining was completely eliminated. Comparison of the temperature conditions with the conventional and the experimental method shows that inaccuracies of the conventional control system are apt to lengthen the smelting process (for the reducing period alone) by an average of 15 - 20 minutes and to increase power consumption by 30 - 40 kW-hour/ton. There are 3 figures.

ASSOCIATION: Zavod "Elektrostal" ("Elektrostal'" Plant) and Tsentral'naya laboratoriya avtomatiki (Central Laboratory of Automation)

Card 2/2

ZUYEV, M.I.; KULTYGIN, V.S.; KABLUKOVSKIY, A.F.; SIMONOV, V.I.; ZUYEV, T.I.; VOROB'YEV, Yu.K.; MARTYNUSHKIN, A.M.; TSUKANOV, V.P.; LAKTIONOV, V.S.

Improved technology of the smelting of ShKh-15 steel for ball bearings. Prom.energ. 17 no.2:12 F '62. (MIRA 15:3)
(Steel--Metallurgy) (Ball bearings)

VINOGRADOV, V.M.; YEFROYMOVICH, Yu.Ye.; KABLUKOVSKIY, A.F.; SIMONOV, V.I.

Automatic control of the thermal conditions of an arc steel smelting furnace. Metallurg 7 no.6:15-18 Je '62. (MIRA 15:7)

1. TSentral'naya laboratoriya avtomatiki i zavod "Elektrostal'".
(Electric furnaces) (Automatic control) (Thermocouples)

KABLUKOVSKIY, A.F., kand. tekhn. nauk; SIMONOV, V.I., inzh.; VINOGRADOV, V.M., inzh.

Bath temperature control and the regulation of thermal conditions in an arc furnace. Stal' 22 no.6:521-523 Je '62. (MIRA 16:7)

1. Zavod "Elektrostal'" i TSentral'naya laboratoriya avtomatiki.
(Electric furnaces)
(Automatic control)

KABLUKOVSKIY, A.F.; SIMONOV, V.I.; PENTYAK, V.I.; LAKTIONOV, V.S.

Simultaneous oxidation of carbon and chromium during metal blowing with oxygen. Izv. vys. ucheb. zav.; chern. met. 6 no.5:70-75 '63. (MIRA 16:7)

1. Zavod "Elektrostal'".
(Chromium steel--Electrometallurgy)
(Oxygen--Industrial applications)

L 18066-63 EWT(d)/EWT(m)/EWP(q)/BDS AFFTC/ASD JD

ACCESSION NR: AP3001663 S/0130/63/000/006/0015/0018

59

AUTHORS: Vinogradov, V. M.; Yefroymovich, Yu, Ye.; Kablukovskiy, A. F.; Simonov, V. I.

TITLE: Automation and programming of steel melting in an electrical furnace

SOURCE: Metallurg, no. 6, 1963, 15-18

TOPIC TAGS: automation, programming, electrical furnace, melting

ABSTRACT: The automatic control which regulates the performance of an electrical furnace has been designed and tested at the plant "Electrostal'." The temperature variation required was determined automatically during the operation or was taken from a temperature graph plotted on the basis of results obtained in other steel melting operations. The program involved the electrical and thermal conditions, the length of melting intervals, the proper order of operations, and the average quantities of the materials used. With this type of control the temperature can be regulated to an accuracy up to + 10C, and the limits of temperature variation of metal in the hearth and in the ladle are decreased 2.5-3.5 times. The order and speed of the operations were sustained. Various deviations from the normal

Card 1/2

L 18066-63

ACCESSION NR: AF3001663

course of the melting process were avoided by regulating electrical power and the composition and quantity of aftercharges. Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 00	DATE ACQ: 09Jul63	ENCL: 00
SUB CODE: ML	NO REF SOV: 000	OTHER: 000

Card 2/2

YEFROYMOVICH, Yu.Ye.; MARTYNUSHKIN, A.M.; TSUKANOV, V.P.; SHIKOV, I.P.; NIKONOV, A.V.; KABLUKOVSKIY, A.F.; KOTIKOV, A.N.; KOLCHANOV, V.A.; VINOGRADOV, V.M.; GENISHT, Ye.S.

VU-5086 computer and high-speed electronic automatic controller for regulating power supply to electric arc furnaces. Prom. energ. 18 no.7: 7-8 Jl '63. (MIRA 16:9)

(Electric furnaces)

KABLUKOVSKIY, A.F.

Improve the quality of alloy steel. Stal' 24 no.9:769-772 S '64.
(MIRA 17:10)

1. Gosudarstvennyy komitet po chernoy i tsvetnoy metallurgii pri Gosplane SSSR.

KABLUKOVSKIY, A.F.

All-Union conference on improving the quality of structural steel. Stal' 24 no.12:1061-1063 D '64. (MIRA 18:2)

1. Gosudarstvennyy komitet po chernoy i tsvetnoy metallurgii pri Gosplane SSSR.

KABLUKOVSKIY, A.F.

For high-quality alloy steel. Metallurg 10 no.2:1-2 F '65.
(MIRA 18:3)

1. Gosudarstvennyy komitet po chernoy i tsvetnoy metallurgii pri Gosplane SSSR.

YEFROYMOVICH, Yu.Ye.; KABLUKOVSKIY, A.F.; KOSYREV, L.K.; PIROZHNIKOV, V.Ye.

Mechanization of the steel making process in arc furnaces.
Metallurg 10 no.6:15-17 Je '65. (MIRA 18:6)

L 40976-66 EWP(c)/EWP(k)/EWT(d)/EWT(m)/EWP(v)/EWP(t)/EWP(l)/ETI/EWP(h) BC/JD

ACC NR: AP6027288 SOURCE CODE: UR/0130/66/000/008/0023/0025 60 3

AUTHOR: Yefroymovich, Yu. Ye.; Pirozhnikov, V. Ye.; Kablukovskiy, A. E.; Vinogradov, V. M.

ORG: Central Laboratory of Automation (Tsentral'naya laboratoriya avtomatiki); Ministry of Ferrous Metallurgy SSSR (Ministerstvo chernoy metallurgii SSSR)

TITLE: System for programmed control of the electroslag melting process

SOURCE: Metallurg, no. 8, 1966, 23-25

TOPIC TAGS: metal melting, steel, ~~melting~~, electroslag melting, ~~elect. electroslag melting control~~, automatic control

ABSTRACT: The Central Laboratory of Automation, in cooperation with the Elektrostal' Plant, has developed a system for programmed control of the electroslag melting process which makes possible complete automation of the process. In this system the process is controlled by time and according to a preset program. The system automatically changes the secondary voltage of the furnace transformer, controls the current according to a preset program within 9—102% of the nominal value with an error not exceeding 3%, interrupts the process for a given time period either by lifting the electrode or by

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ACC NR: AP6027288

disconnecting the secondary circuit, changes the melting conditions to those of filling the shrinkage cavity, lifts the electrode and disconnects the power when melting is completed, and shows continuously the important conditions of the process. The system has been installed in three electroslag furnaces at the Elektrostal' Plant and has been in operation for two years. This year, the Central Laboratory of Automation will deliver a series of these systems to other metallurgical plants possessing electroslag furnaces. Orig. art. has: 3 figures. [DV]

SUB CODE: 13/ SUBM DATE: none/ ATD PRESS: 5058

Card 2/2

TATARSKAYA, T.B.; KABLUKOVSKIY, L.F.; SKOROKHOD, S.D.

Magnesite mass with an addition of calcium aluminate slag for electric furnace linings. Ogneupory 18 no.9:401-406 '53.
(MIRA 11:10)

1.TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii.
(Refractory materials) (Electric furnaces)

KABO, G.Ya.; ANDREYEVSKIY, D.N.

Thermodynamics of the isomerization of monochlorpropanes.
Neftekhimiia 5 no.1:132-135 Ja-F '65.
(MIRA 18:5)

1. Kuybyshevskiy politekhnicheskiy institut imeni Kuybysheva.

KABO, G.Ya.; ANDREYEVSKIY, D.N.

Thermodynamic functions of iodoalkanes. Izv.vys.ucheb.zav., khim.i khim.tekh. 8 no.4:574-578 '65.

(MIRA 18:11)

1. Kuybyshevskiy politekhnicheskiy institut imeni Kuybysheva, kafedra tekhnologii osnovnogo organicheskogo sinteza i sinteticheskogo kauchuka.

ANDREYEVSKIY, D.N.; KABO, G.Ya.

Change in the entropy of certain reactions of aliphatic halide compounds. Zhur. fiz. khim. 39 no.6:1514-1515 Je '65. (MIRA 18:11)

1. Kuybyshevskiy politekhnicheskiy institut. Submitted April 13, 1964.

KABO, L.D.

Guaranteed grain yields in irrigated lands. Zemledelie 26 no.12: 59-62 D '64. (MIRA 18:4)

1. Nachal'nik upravleniya zernovykh i kormovykh kul'tur Ministerstva proizvodstva i zagotovok sel'skokhozyaystvennykh produktor Uzbekskoy SSR.

KABO, L.D.; LITVIN, N.A., kand. sel'skokhoz. nauk; BELOUS, N.V.; VASILENKO, L.D.; ZEYFERT, O.A.; KOVALEV, F.V.; TURULEV, V.K., aspirant

Sorgo as a valuable crop. Zemledelie 27 no.4:52-61 Ap '65. (MIRA 18:4)

1. Nachal'nik Upravleniya zernovykh i kormovykh kul'tur Ministerstva proizvodstva i zagotovok sel'skokhozyaystvennykh produktov Uzbekskoy SSR (for Kabo). 2. Ukrainskiy nauchno-issledovatel'skiy institut oroshayemogo zemledeliya (for Litvin, Belous, Vasilenko). 3. Vsesoyuznyy nauchno-issledovatel'skiy institut agrolesomelioratsii (for Zeyfert). 4. Donskoy sel'skokhozyaystvennyy institut (for Kovalev, Turulev).

B/137/61/000/012/084/149
A006/A101

AUTHORS: Genis, A.A., Kabo, M.A., Pliner, L.R., Sunakslis, Ya.M., Timbars, T.M., Yanushkovskiy, V.A.

TITLE: Experiences in the use of relay-type radioactive devices in automating technological processes at the "Sarkanais Metallurgs" Plant

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 12, 1961, 15, abstract 12D105 (V sb. "Radioakt. izotopy i yadern. izlucheniya v nar. kh-ve SSSR, v. 3", Moscow, Gostoptekhizdat, 1961, 145)

TEXT: At the Liepaya metallurgical plant a number of operations of technological processes are being automated with the aid of control equipment manufactured by serial production. Automation is based on the use of radioactive isotopes. The following operations are being automated: control of the automatic removal of the sheet off the finished metal conveyer belt; blocking unit on cold cutting shears of mill 350; control of the compressor unit operation at the oxygen station ГК-30 (GK-30). The introduction of radioactive automation led to improved labor conditions and reduced the number of workers.

N. Yudina

[Abstracter's note: Complete translation]

Card 1/1

KABO, R.I.

New method of joining a magnetic tape to a Getinaks strip.
Razved.i prom.geofiz. no.44:101 '62. (MIRA 15:7)
(Seismic prospecting--Equipment and supplies)

KABO, P.

KABO, P. Ocherki istorii i ekonomiki Tuvy. Moskva, Sotsekgiz, 1934. (Nauchno-issledovatel'skaia assotsiatsiia po izucheniiu natsional'nykh i kolonial'nykh problem. vyp. XII.)
NN DLC: Unclass.

So: LC, Soviet Geography, Part II, 1951/Unclassified.